Hatchery 09
Article 12

RED RIVER REARING POND

Production Report

Brood Year 1986

by

Thomas S. Frew
Hatchery Superintendent II

March 1989

TABLE OF CONTENTS

Page

ABSTRACT 1

INTRODUCTION 2

LOCATION 2

OBJECTIVES 2

FISH REARING FACILITIES 2

STAFFING 3

FISH PRODUCTION 3

FISH DISTRIBUTION 3

Fish Tagging 3
Fish Release Information 3

FISH HEALTH 4

ECONOMICS 4

LITERATURE CITED 5

APPENDICES 6

LIST OF APPENDICES

Appendix 1. A summary of tag codes and freeze brands used at Red River holding pond on the brood year 1986 chinook salmon presmolts 7

Appendix 2. Length frequency of presmolt chinook salmon released from the Red River rearing pond, October 1987 . . . 8

ABSTRACT

Due to the construction of adult trapping and holding facilities at Red River during 1986, there were no adult spring chinook salmon trapped that year. The presmolts released in 1987 originated from eggs collected at Rapid River in 1986. The fry were reared at Rapid River Hatchery during the winter and spring of 1986-1987 and transported to Red River rearing pond in July 1987 for final rearing.

There were no disease problems during the rearing cycle, and the presmolts were in excellent condition upon release during early October 1987. There were a total of 233,100 presmolts released, of which 46,100 carried coded wire tags and freeze brands.

The fish had a conversion rate of 0.91 requiring 5,085 pounds of feed to produce 5,589 pounds of fish.

Author:

Thomas S. Frew
Fish Hatchery Superintendent II

INTRODUCTION

Red River rearing pond was built in 1977 under the Columbia River Fisheries Development Project and was administered jointly by the National Marine Fisheries Service, Idaho Department of Fish and Game, U.S. Forest Service, and the Pacific Northwest Regional Commission until 1986. During 1986, a permanent adult trapping and holding complex was constructed on site by the U.S. Army Corps of Engineers as part of the Lower Snake River Fish and Wildlife Compensation Plan. Beginning in 1986, the Red River rearing pond was funded by the U.S. Fish and Wildlife Service (USFWS), and the facility is staffed and operated by the Idaho Department of Fish and Game (IDFG) and is to be a satellite facility of the Clearwater Hatchery.

LOCATION

The rearing pond is located approximately nine miles east of Elk City, Idaho, near the confluence of the North and South forks of Red River, a tributary to the South Fork of the Clearwater River.

OBJECTIVES

1. Restore chinook salmon (Oncorhynchus tshawytscha) to the South Fork of the Clearwater River.

2. Trap and spawn adult salmon returning to Red River.

3. Rear 300,000 spring chinook presmolts for fall release into the South Fork of the Clearwater River.

FISH REARING FACILITIES

Fish rearing facilities consist of an earthen pond 100 m (330 ft.) by 82.3 m (270 ft.) by 1.5 m (5 ft.) average depth. The pond is fed by approximately 3 cubic feet per second water flow collected from the South Fork of Red River and piped to the pond. Designed capacity of the pond is 300,000 presmolts.

An adult trapping and spawning facility is located on the site. This facility is equipped with a removable weir, fish ladder, trap, two adult holding ponds, 3 m x 26.8 m (10 ft. x 88 ft.), and covered spawning area. Water is supplied from the South Fork of Red River thrcugh an underground pipeline. A portion of all adults trapped are passed above the weir for natural spawning. Eggs collected at the facility are transported "green" to either Rapid River or Kooskia hatcheries for incubation, hatching and

early rearing. Ultimately, the eggs will be transferred to the Clearwater Hatchery for hatching and early rearing. Resulting fry are transported back to the rearing pond for final rearing and release.

STAFFING

The facility has been staffed by a temporary employee in the past. Assistance during spawning and for general hatchery management has been provided on an as needed basis by the Rapid River Hatchery and/or McCall Hatchery crews.

FISH PRODUCTION

During 1986, the Red River facility was shut down due to construction and no adults were trapped. The fish that were reared during the summer of 1987 were a mix of fry from brood year 1986 Rapid River stock that were trapped at Rapid River Fish Hatchery and Hells Canyon Dam.

A total of 238,900 fingerling spring chinook averaging 206 fish/lb. were transferred from Rapid River Hatchery in July 1987. Early rearing history of these fish can be found in Rapid River Hatchery 1986 Brood Year Report (Levendofske 1988). In early October, 233,100 fish averaging 41.7 fish/lb. were directly released into Red River.

FISH DISTRIBUTION

Fish Tagging

From September 28 to October 2, 1987, 47,484 fish were coded wire tagged, adipose fin clipped and freeze branded. All branded fish received a right dorsal "t" in the third position (RD-"T"-3), and the data tag code used for these fish was 10-40-1 (Appendix 1). Due to limitations of the rearing pond, all fish were directly released into Red River immediately after marking. The total number of marked fish released was 46,100.

Fish Release Information

From September 28 to October 5, 1987, 233,100 presmolts weighing 2,537 kg (5,589 lbs.) were released into Red River. All fish were volitionally released from the rearing pond. The presmolts averaged 91.74 fish per kg (41.7 fish per pound) and 104 mm (4.09 inches) fork length (Appendix 2).

FISH HEALTH

There were no disease problems in the Brood Year 1986 fry reared at Red River holding pond during the entire rearing cycle.

During the spawning season in 1987, kidney imprints were taken on all adult holding pond mortalities. After the imprints were fixed in methanol, they were sent to the IDFG pathology lab for analysis via direct Fluorescent Antibody Technique (FAT) for Renibacterium salmonarium. The results of these tests showed 55 (47%) positive of 118 samples taken. Five of the positive fish (9.0X) were light positive, 3 fish (5.45%) were moderately positive and 47 fish (85.45%) were heavy positive. In addition, adults were sampled for various diseases during spawning on August 26, 1987. Results were positive for Infectious Hematopoietic Necrosis (IHN) virus and Infectious Pancreatic Necrosis (IPN) virus; no titers were established for the virus.

ECONOMICS

A total of 2,308 kg (5,085 pounds) of Oregon Moist Pellet were fed to produce the 2,537 kg (5,589 pounds) of fish this brood year. This resulted in a conversion rate of 0.91 pounds of fish feed per pound of fish produced. The total feed cost was $2,079.76 and the cost per pound of fish produced was $0.37.

LITERATURE CITED

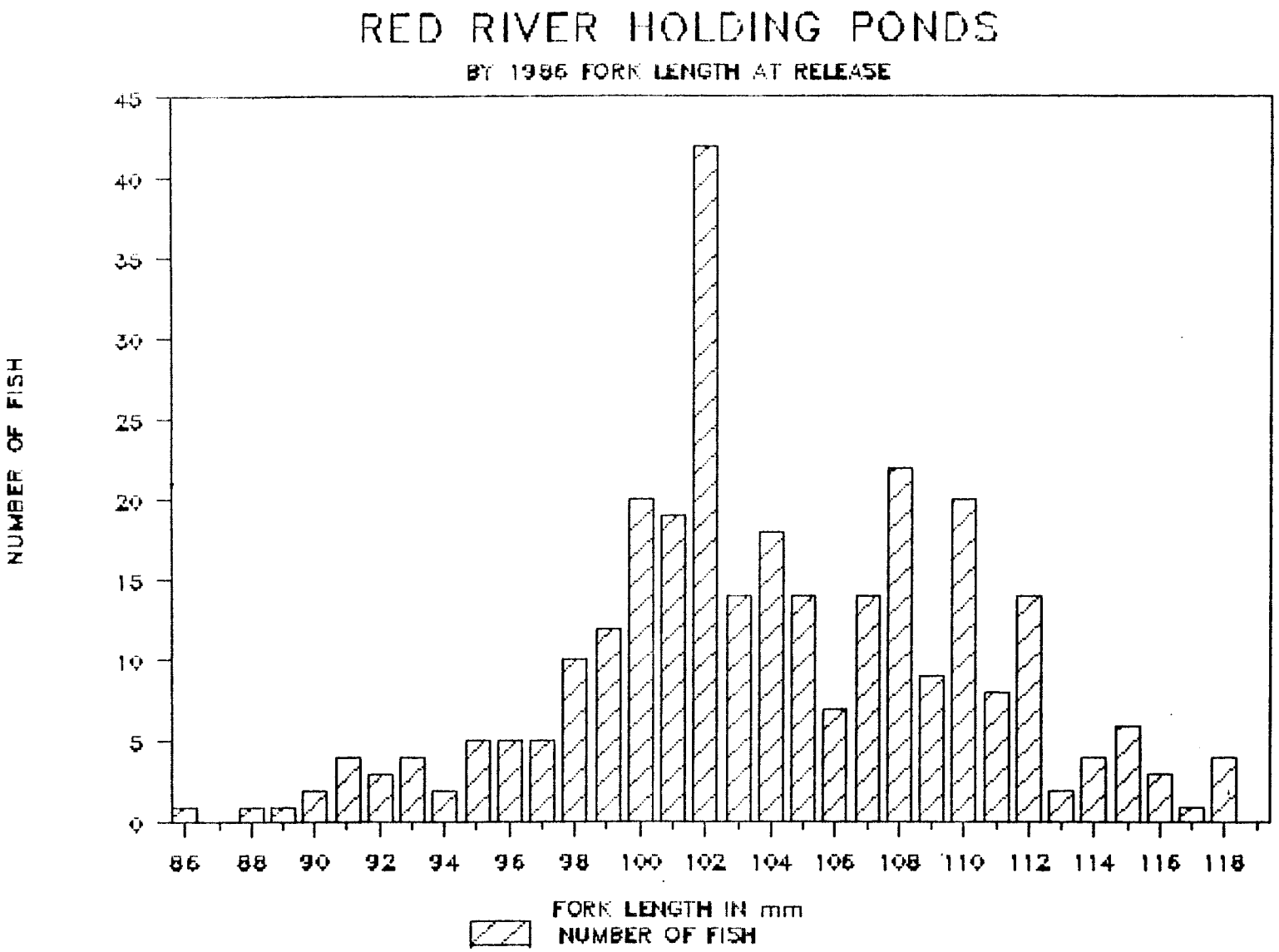
Piper, R.G., I.B. McElwain, L.E. Orme, J.P. McCraren, L.G. Fowler, and J.R. Leonard. 1982. Fish Hatchery Management, United States Department of the Interior, Fish and Wildlife Service, Washington, D.C. 517 pp.

RRIVER

A P P E N D I C E S

Appendix 1. A summary of tag codes and freeze brands used at Red River holding pond on the brood year 1986 chinook salmon presmolts.

Mark used	Freeze brand RD-"T"-3	CWT code 10-40-1
Total marked	47,484	47,484
Total mortality	0	0
Mark loss 2.9%	1,425	1,425
Marks released	46,100	46,100
Total hatchery production	233,100	



Appendix 2. Length frequency of presmolt chinook salmon released from the Red River rearing pond, October 1987.

Submitted by:

Thomas S. Frew
Hatchery Superintendent II

Approved by:

IDAHO DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

Steven M. Huffaker, Chief
Bureau of Fisheries

Bill Hutchinson
Anadromous Hatcheries Supervisor